Transfer the center portion of the filtering area of each filter to a sterile test tube 38 millimeters × 200 millimeters (outside dimensions) containing 90 milliliters±10 milliliters of sterile medium I. Incubate the tube for 7 days at 30° C. to 32° C. Using sterile forceps transfer the outer portion of each filter to a similar test tube containing 90 milliliters ±10 milliliters of sterile medium J. Incubate this tube for 7 days at 22° C. to 25° C.

(ii) *Ointments containing penicillin.* Proceed as directed in paragraph (e)(3)(i) of this section, except in lieu of sterile medium I use sterile medium L for the center portion of the filtering area of each filter and in lieu of sterile medium J use sterile medium M for the remaining outer portion of each filter.

(f) *Evaluation of results*—(1) *Bacterial membrane-filter method.* The batch, or the part of the batch represented by a particular filling operation meets the requirements of the test if no sample tube shows growth. If growth is observed in any sample tube, run a second test in the appropriate medium, except perform it in duplicate, using 40 immediate containers. If in the original test, growth is observed in only one of the two media, test both portions of the cut filter membrane by placing each into a separate tube of the same medium. The batch meets the requirements if no tube on the second test shows growth. If growth is observed in any of the control tubes as well as in the sample tubes in either the original or the second test such test is invalid and must be performed again. In any event, further tests may be justified if there is sufficient reason to believe that the results obtained in the first and second tests may not be valid. In such instances, the batch is satisfactory if on the final test no tube shows growth.

(2) *Direct method.* The batch, or the part of the batch represented by a particular filling operation, meets the requirements of the test if no tube shows growth after incubation. If growth is observed in any sample tube, run a second test in the appropriate medium using 40 immediate containers. The batch is satisfactory if, on the second test, no tube shows growth. If growth is observed in any of the control tubes (except inoculated tubes, if the sample is penicillin) as well as in the sample tubes in either the original or the second test, such test is invalid and must be performed again. In any event, further tests may be justified if there is sufficient reason to believe that the results obtained on the first and second tests may not be valid. In such instances the batch is satisfactory if in the final test no tube shows growth.

[39 FR 18944, May 30, 1974, as amended at 41 FR 46852, Oct. 26, 1976; 42 FR 27228, May 27, 1977; 43 FR 43457, Sept. 26, 1978; 49 FR 25846, June 25, 1984; 49 FR 40006, Oct. 12, 1984; 50 FR 48397, Nov. 25, 1985; 52 FR 4611, Feb. 13, 1987; 53 FR 13401, Apr. 25, 1988]

Subpart C—Biological Test Methods

§ 436.31 Equipment and diluents for use in biological testing.

(a) *Equipment*—(1) *Temperature-measuring devices.* Use an accurate clinical thermometer or any other temperature-measuring device of equal sensitivity that has been tested to determine the time necessary to reach the maximum reading.

(2) *Pyrogen-free glassware.* Render all glassware free from pyrogens by heating at 250° C. for not less than 30 minutes or by any other suitable method.

(3) *Pyrogen-free syringes and needles.* Render all syringes and needles free from pyrogens by heating at 250° C. for not less than 30 minutes or by any other suitable method.

(4) *Pyrogen-free sodium chloride.* Heat sodium chloride for not less than 2 hours at 200° C.

(5) *Pyrogen-free sodium carbonate.* Heat anhydrous sodium carbonate for not less than 4 hours at 170° C.

(b) *Diluents.* (1) Diluent 1 (pyrogen-free water): Prepare pyrogen-free water by collecting freshly distilled water and sterilizing it in an autoclave at 121° C. for not less than 20 minutes. Pyrogen-free water meets the requirements for the absence of pyrogens as described in § 436.32(a)(3) when 10 milliliters per kilogram are administered as described in § 436.32(a)(2). In testing water for the absence of pyrogens, the aliquot to be tested is made isotonic by the addition of pyrogen-free sodium chloride.

(2) Diluent 2 (pyrogen-free saline solution): Prepare an isotonic solution of sodium chloride by dissolving 9.0 grams of pyrogen-free sodium chloride (prepared as described in § 436.31(a)(4)) in pyrogen-free, distilled water (diluent 1) to make 1,000 milliliters. Sterilize in an autoclave at 121° C. for not less than 20 minutes. Pyrogen-free saline solution meets the requirements for the absence of pyrogens as described in § 436.32(a)(3) when 10 milliliters per kilogram are administered as described in § 436.32(a)(2).

(3) Diluent 3 (sterile distilled water): Prepare freshly distilled water. Sterilize in an autoclave at 121° C. for 20 minutes.

(4) Diluent 4 (sterile saline solution): Dissolve 9.0 grams of sodium chloride in distilled water to make 1,000 milliliters. Sterilize in an autoclave at 121° C. for 20 minutes.

(5) Diluent 5 (10 percent gum acacia): Dissolve 10 grams of gum acacia in approximately 50 milliliters of distilled water. Allow to stand overnight at room temperature and dilute to 100 milliliters with distilled water. Filter through cotton. Store under refrigeration.

(6) Diluent 6 (0.5 percent gum acacia in distilled water). 11132

(7) Diluent 7 (1.0N hydrochloric acid).

(8) Diluent 8 (0.1N hydrochloric acid).

(9) Diluent 9 (0.05N sodium hydroxide).

(10) Diluent 10 (1 percent U.S.P. methylcellulose (4,000 centipoises) solution): Dissolve 1 gram of U.S.P. methylcellulose (4,000 centipoises) in 100 milliliters of distilled water. Allow to stand overnight at room temperature or until solution is complete. Store under refrigeration.

(11) Diluent 11 (0.12*N* sodium hydroxide).

(12) Diluent 12 (0.5 percent methylcellulose (4,000 centipoises) in distilled water). Proceed as directed in paragraph (b)(10) of this section, except use 0.5 gram of methylcellulose (4,000 centipoises).

(13) Diluent 13 (pyrogen-free sodium carbonate solution). Dissolve 25.6 grams of anhydrous pyrogen-free sodium carbonate (prepared as described in paragraph (a)(5) of this section) in 1,000 milliliters pyrogen-free, distilled water (diluent 1). Pyrogen-free, sodium carbonate solution meets the requirements for the absence of pyrogens as described in § 436.32(a)(3) when 1.0 milliliter per kilogram is administered as described in § 436.32(a)(2).

(14) Diluent 14 (0.07M sterile sodium carbonate solution). Dissolve 7.3 grams of sodium carbonate in distilled water to make 1,000 milliliters. Sterilize in an autoclave at 121° C. for 20 minutes.

(15) Diluent 15 (pyrogen-free sodium carbonate solution): Dissolve 9.9 grams of anhydrous pyrogen-free sodium carbonate (prepared as directed in paragraph (a)(5) of this section) in 1,000 milliliters of pyrogen-free, distilled water (diluent 1). Pyrogen-free sodium carbonate solution meets the requirements for the absence of pyrogens as described in § 436.32(a)(3) when 1.0 milliliter per kilogram is administered as described in § 436.32(a)(2).

(16) Diluent 16 (0.13*M* sterile pyrogen-free sodium carbonate solution). Dissolve 14.0 grams of anhydrous pyrogen-free sodium carbonate (prepared as described in paragraph (a)(5) of this section) in 1,000 milliliters pyrogen-free, distilled water. Sterilize in an autoclave at 121 °C for 20 minutes.

[39 FR 18944, May 30, 1974, as amended at 40 FR 51625, Nov. 6, 1975; 50 FR 48397, Nov. 25, 1985; 53 FR 13401, Apr. 25, 1988]

§ 436.32 Pyrogen test.

(a) *Method 1*—(1) *Test animal.* Use healthy, mature rabbits weighing not less than 1,800 grams each that have maintained their weight on an antibiotic-free diet for at least 1 week under the environmental conditions specified in this section. House the animals individually in an area of uniform temperature (±3° C.) and free from disturbances likely to excite them. Do not use animals for pyrogen tests more frequently than once every 48 hours or prior to 2 weeks following their having been given a test sample that was adjudged pyrogenic. Before using an animal that has not been used for a test during the previous 2 weeks, condition it 1 to 3 days prior to pyrogen testing by conducting a sham test as directed in paragraph (a)(2) of this section, omitting the injection.